IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) Method for the identification of Pupin coil ~~[sic]~~ interposed in a subscriber connection line, having the following steps:

(a) transmission of periodic transmission symbols by a transmission device ~~(2, 4, 5)~~,

(b) reception, sampling and further processing of an analog reception signal by a reception device ~~(3, 6)~~,

(c) determination of the frequency response of the reception signal for a prescribed number of frequency points in a prescribed frequency range,

(d) calculation of a function with function values ($F(f_i)$) from the real part and the imaginary part of the frequency response of the reception signal, and

(e) determination of a differential vector ($\Delta r_i$) from the function values ($F(f_i)$) by a computing unit ~~(11, 12, 13, 14, 15)~~,

a criterion which specifies whether a pupinized line is present being derived from the components of the differential vector ($\Delta r_i$).

2. (Currently Amended) Method according to Claim 1, ~~characterized in that~~ wherein a first partial vector ($r1$) and a second partial vector ($r2$) are formed from the function values ($F(f_i)$) by a function generator ~~(12)~~, an intermediate vector ($P12 \cdot r2$) is determined from the second partial vector ($r2$) by a matrix multiplication device ~~(13)~~ and the differential vector ($\Delta r_i$) is formed from the first partial vector ($r1$) and the intermediate vector ($P12 \cdot r2$) in a differential stage ~~(15)~~.

3. (Currently Amended) Method according to Claim 2, ~~characterized in that~~ wherein the first partial vector ($r1$) comprises, as components, the function values ($F(f_i)$) with an even-numbered index and the second partial vector ($r2$) comprises, as components, the function values ($F(f_i)$) with an odd-numbered index.

4. (Currently Amended) Method according to ~~one of Claims 1 to 3, characterized in that~~ Claim 1, wherein the criterion consists in the difference between a maximum value and a minimum value of the components of the differential vector

($criterion = \Delta r_{max} - \Delta r_{min}$) being compared with a differential prescribed value in a comparator device ~~(14)~~, and a signal being output if the difference is greater than the differential prescribed value.

5. (Currently Amended) Method according to ~~one of Claims 1 to 3, characterized in that~~ Claim 1, wherein the criterion consists in the sum of the absolute values of the components of the differential vector $criterion = \sum_i \Delta|r_i|$, being compared with a sum prescribed value in a comparator device ~~(14)~~, and a signal being output if the sum is greater than the sum prescribed value.

6. (Currently Amended) Method according to ~~one of Claims 1 to 3, characterized in that~~ Claim 1, wherein the criterion consists in the sum of the squares of the components of the differential vector ($criterion = \sum_i \Delta r_i^2$) being compared with a square sum prescribed value in a comparator device ~~(14)~~, and a signal being output if the sum is greater than the square sum prescribed value.

7. (Currently Amended) Method according to ~~one of Claims 1 to 3, characterized in that~~ Claim 1, wherein the criterion consists in the number of components of the differential vector ($\Delta r_i$) which are significantly different from zero being compared with a zero component prescribed value in a comparator device ~~(14)~~, and a signal being output if the sum is greater than the zero component prescribed value.

8. (Currently Amended) Method according to Claim 7, ~~characterized in that~~ wherein, in order to determine the number of components of the differential vector ($\Delta r_i$) which are significantly different from zero, the coefficients are rounded and represented with a finite word length, the quantization size (word length) being chosen such that the values zero result for all the coefficients in the case of a non-pupinized line.

9. (Currently Amended) Method according to ~~one of the preceding claims, characterized in that~~ Claim 1, wherein the prescribed frequency range lies between about 1 and 5 kHz.

10. (Currently Amended) Device for the identification of Pupin coil ~~[sic]~~ interposed in a subscriber connection line, having:

(a) a transmission device ~~(2, 4, 5)~~ for the transmission of periodic transmission symbols,

(b) a reception device ~~(3, 6)~~ for the reception, sampling and further processing of an analog reception signal, and

(c) a computing unit ~~(11, 12, 13, 14, 15)~~ for:

(i) determining the frequency response of the reception signal for a prescribed number of frequency points in a prescribed frequency range,

(ii) calculating a function with function values ($F(f_i)$) from the real part and the imaginary part of the frequency response of the reception signal, and

(iii) determining a differential vector ($\Delta r_i$) from the function values ($F(f_i)$),

a criterion which specifies whether a pupinized line is present being derived from the components of the differential vector ($\Delta r_i$).

11. (Currently Amended) Device according to Claim 10, ~~characterized in that~~ wherein the computing unit ~~(11, 12, 13, 14, 15)~~ comprises a function generator ~~(12)~~ for forming a first partial vector ($r1$) and a second partial vector ($r2$) from the function values ($F(f_i)$), a matrix multiplication device ~~(13)~~ for determining an intermediate vector ($P12 \cdot r2$) from the second partial vector ($r2$) and a differential stage ~~(15)~~ for forming the differential vector ($\Delta r_i$) from the first partial vector ($r1$) and the intermediate vector ($P12 \cdot r2$).

12. (Currently Amended) Device according to ~~either of Claims 10 and 11, characterized in that~~ Claim 10, wherein the computing unit ~~(11, 12, 13, 14, 15)~~ comprises a comparator device ~~(14)~~ for comparing the difference between a maximum value and a minimum value of the components of the differential vector ($criterion = \Delta r_{max} - \Delta r_{min}$) with a differential prescribed value and for outputting a signal if the difference is greater than the differential prescribed value.

13. (Currently Amended) Device according to ~~either of Claims 10 and 11, characterized in that~~ Claim 10, wherein the computing unit ~~(11, 12, 13, 14, 15)~~ comprises a comparator device ~~(14)~~ for comparing the sum of the absolute values of the components of the differential vector ($criterion = \sum_i \Delta|r_i|,$) with a sum prescribed value and for outputting a signal if the sum is greater than the sum prescribed value.

14. (Currently Amended) Device according to ~~either of Claims 10 and 11, characterized in that~~ Claim 10, wherein the computing unit ~~(11, 12, 13, 14, 15)~~ comprises a comparator device ~~(14)~~ for comparing the sum of the squares of the components of the differential vector ($criterion = \sum_i \Delta r_i^2$) with a square sum prescribed value and for outputting a signal if the sum is greater than the square sum prescribed value.

15. (Currently Amended) Device according to ~~either of Claims 10 and 11, characterized in that~~ Claim 10, wherein the computing unit ~~(11, 12, 13, 14, 15)~~ comprises a comparator device ~~(14)~~ for comparing the number of components of the differential vector which differ significantly from zero with a zero component prescribed value and for outputting a signal if the sum is greater than the zero component prescribed value.

16. (Currently Amended) Device according to ~~one of Claims 10 to 15, characterized in that~~ Claim 10, wherein the prescribed frequency range lies between about 1 and 5 kHz.